

Claims

1. A circuit arrangement for starting and operating
discharge lamps (L, Lp1, Lp2), with the following
5 features:
 - an inverter, which delivers at an inverter output
(N25, N26) an inverter voltage which has an
inverter frequency,
 - 10 • discharge lamps (L, Lp1, Lp2) with electrode
filaments can be connected by means of lamp
terminals (J3-J6) to the inverter output (N25)
via a matching network (L3, C6, C7), which has a
15 resonant circuit (L3, C6, C7) with a natural
frequency,
 - a preheating resistor (R1), which brings about
damping of the resonant circuit (L3, C6, C7) via
20 the electrode filaments during a preheating
phase, with the effect that the resonant
frequency of the resonant circuit (L3, C6, C7) is
reduced from the natural frequency to a damping
resonant frequency,
 - 25 • an igniting phase, in which the preheating
resistor (R1) assumes values which bring about
reduced damping of the resonant circuit (L3, C6,
C7) in comparison with the preheating phase, with
30 the effect that the resonant frequency of the
resonant circuit (L3, C6, C7) approaches the
natural frequency,
 - a controller, the controller output of which
35 outputs an actuating signal, the controller
output being coupled to the inverter in such a
way that the actuating signal influences the
inverter frequency,

- a first controller input, into which there is fed a first electrical variable, which corresponds to the current of the gas discharge of a connected discharge lamp (Lp1, Lp2), the first electrical variable assuming a starting value in the event that there is no gas discharge, and the first electrical variable lying above a minimum value in the event that there is a gas discharge,
 - in the event that the first electrical variable assumes the starting value, the controller brings about an inverter frequency which lies between the damping resonant frequency and the natural frequency and
 - in the event that the first electrical variable lies above the minimum value, the controller brings about an inverter frequency which leads to a desired lamp current or a desired lamp power.
2. The circuit arrangement as claimed in claim 1, wherein the controller has a second controller input, into which there is fed via a threshold switch (MOV), a second electrical variable, which corresponds to a second operating variable, which is a measure of the reactive energy that resonates in the resonant circuit (L3, C6, C7), the value of the second electrical variable bringing about a greater value of the inverter frequency if the threshold value of the threshold switch (MOV) is exceeded.
3. The circuit arrangement as claimed in claim 1, wherein the inverter comprises a charge pump.
4. The circuit arrangement as claimed in claim 1, wherein the inverter is a half-bridge inverter.

5. The circuit arrangement as claimed in claim 1,
wherein the preheating resistor (R1) is a
temperature-dependent resistor with a positive
5 temperature coefficient.
6. The circuit arrangement as claimed in one of claims
1 to 4, characterized in that the preheating
resistor (R1) is connected in series with an
10 electronic switch.
7. A method for starting and operating discharge lamps
with a circuit arrangement as claimed in claim 1,
characterized by the following steps:
- 15
- damping the resonant circuit (L3, C6, C7) by a
preheating resistor (R1) via electrode filaments
of connected discharge lamps,
- 20
- removal of the damping of the resonant circuit
(L3, C6, C7).